Baseline 2015 MEB

MCCDC

Concepts Branch
Futures Division

24 Jan 03

“Baseline” 2015 MEB

- **Purpose of the Brief:**

  To provide background *for the current direction*
  of Baseline 2015 MEB development

- **Baseline 2015 MEB contributing to various dispar efforts:**
  - **LHA(R) AoA**
  - **DoN lift II (+) Study**
  - **Power Projection IWAR (PP&O and N-81)**
  - **MPF(F) Conops**
  - **Global Conops / N-70 Conops**
  - **DPG-04**
    - **3.0 MEB Lift**
    - **Enhanced Network Seabasing Concept as it contributes t**

2015 “Baseline” MEB

- **The Reason for a Baseline MEB -**
  - **“Baseline” vs. “Notional”**
  - ***For use in mission area analyses, lift studies, development of naval c***
    war-games/experimentation, force development, and other appropria
- **Methodology -**
  - **Advocate & Functional Area Representatives**
  - **Establishment of Terms of Reference**
  - **Initially built MEB based on anticipated warfighting requirements i**
    employment platforms
  - **Sizing a “balanced force”**
  - **Advocate Briefings accelerated because of early release of the *DRAF***
  - **Final Staffing**
  - **MRB / MROC**
- **End State –**
  - **Baseline 2015 MEB (MPF and Amphibious)**

2015 “Baseline” MEB

Refining our “Axis of Advance” towards achieving Maneuver Warfare Capability Enhancements in…

- **Joint / Multi-National Enabling**
- **Strategic Agility**
- **Operational Reach**
- **Tactical Flexibility**
- **Support and Sustainment**

…this MEB establishes a single 2015 “baseline” w

- **Greater Combat Power**
- **More Lethality**
- **Greater Reach and Maneuverability**
- **More Flexibility for the Joint Force Commander**
- **More Flexible & Responsive Sustainment**

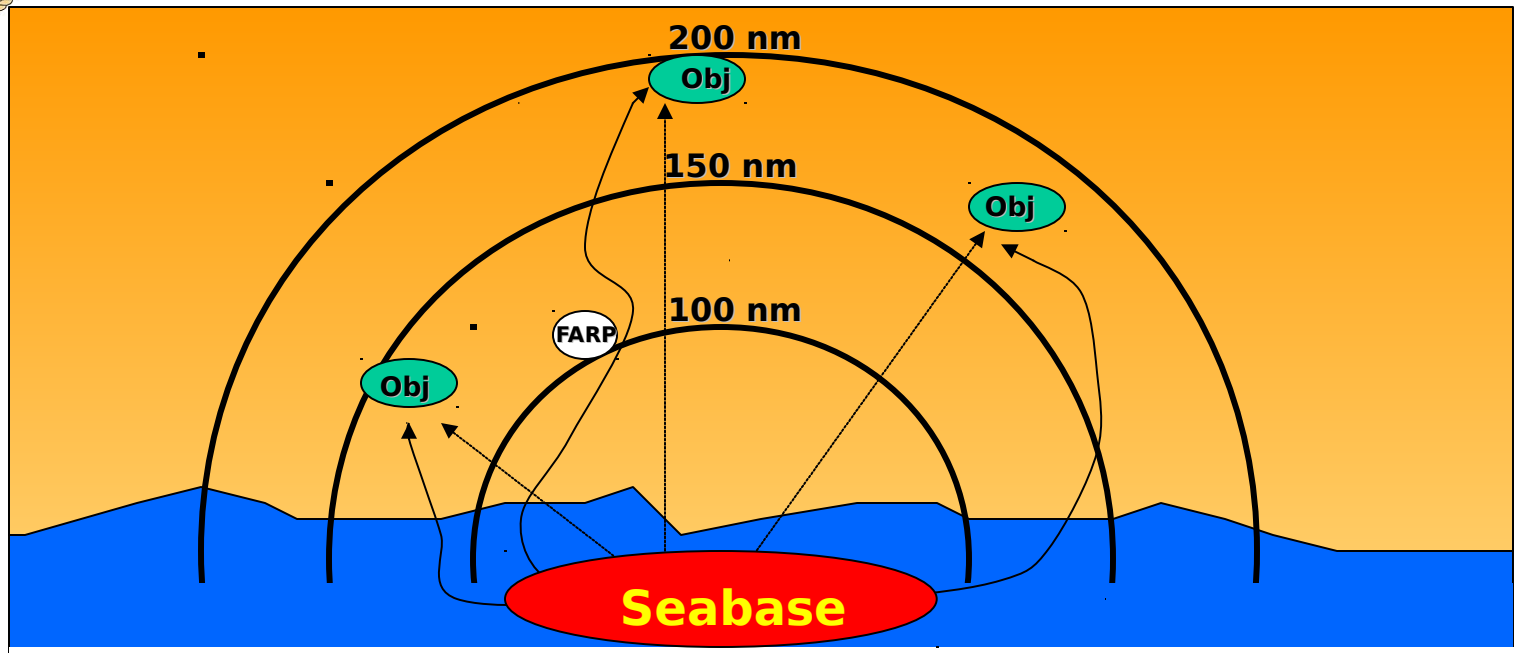
Baseline MEB TOR

- **Capabilities-based, not scenario derived**
- **Capable of Forcible Entry Operations**
- **NSFS capabilities will remain limited with increased reliance on organic MAGTF fires**
- **Will conduct OTH Operations**
- **Future info connectivity allows increased distributed staff functions & reachback**
- **Project Power w/o HNS or fixed ports and/or airfields in the theater of ops**
- **Conduct operations out to max operational reach (up to 200 NM sustained)**
- **Conduct multiple, concurrent, dissimilar missions; rapidly transitioning from**

Baseline MEB Assumptions

- **3.0 Amphibious MEB (AE) / 3.0 MPF requirement**
- **In terms of Personnel (T/O) and Major End items (T/E – Vehicle Square)**
- **Force will possess increase in maneuverability and firepower**
- **Approximations for efficiencies anticipated in C2 & Maintenance for 2015**
  - **Fewer Comm and Maintenance related personnel, vehicles and equipment**
- **There will be a mix of legacy and future amphibious shipping (LPD-17, 1 x LHA(R))**
- **Cargo Cube / Quadcons / Fuel / Ammunition / etc. to be *addressed as a***

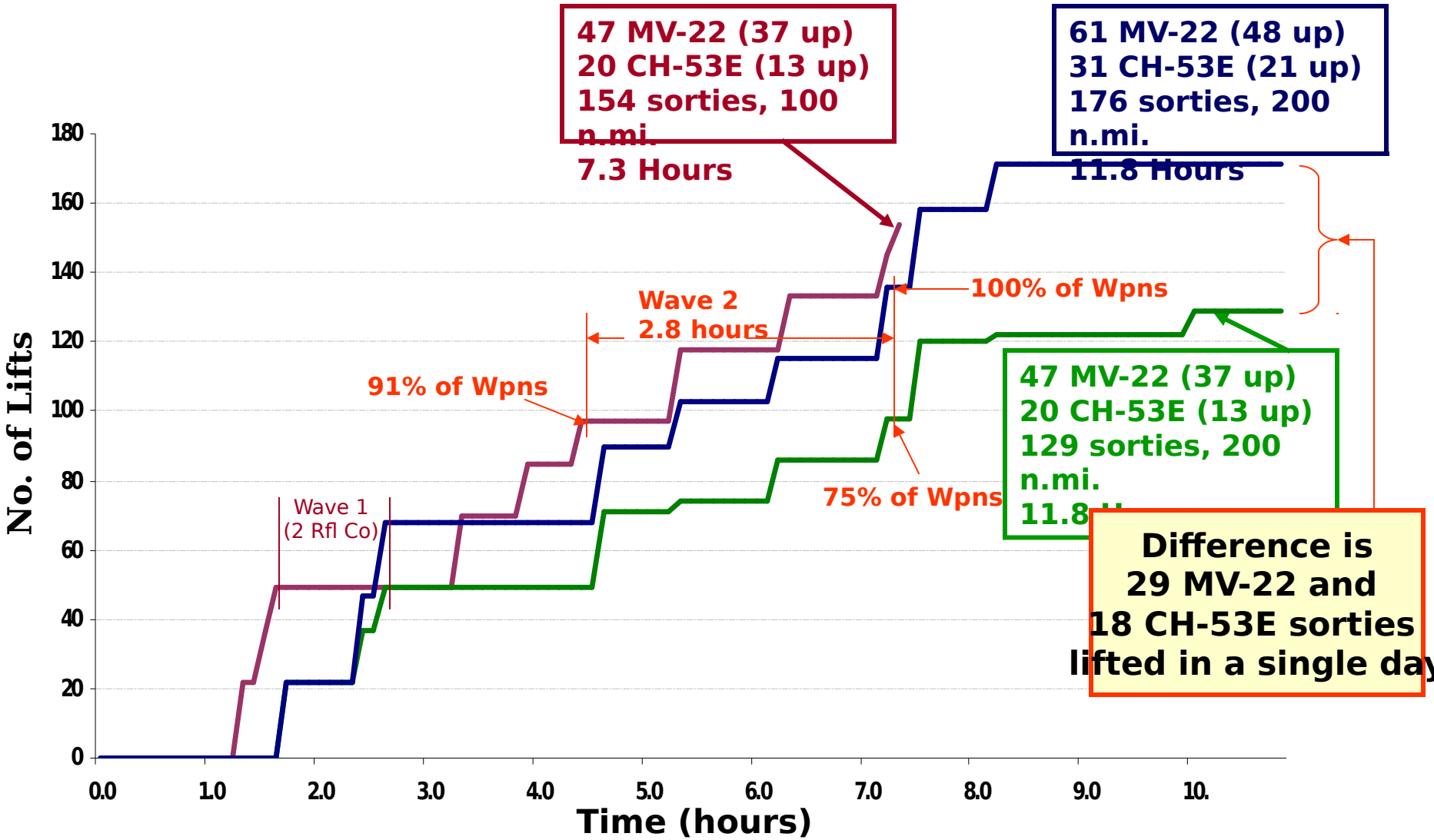
Reach Metric (STOM)



- **Vertical Assault BLT (Rein) was selected as a way to determine what the "balanced ACE" might be**

- **There are endless possibilities dependent upon Miss Terrain & Weather, Troops, and Time (METT-T)**

Force Buildup Timelines



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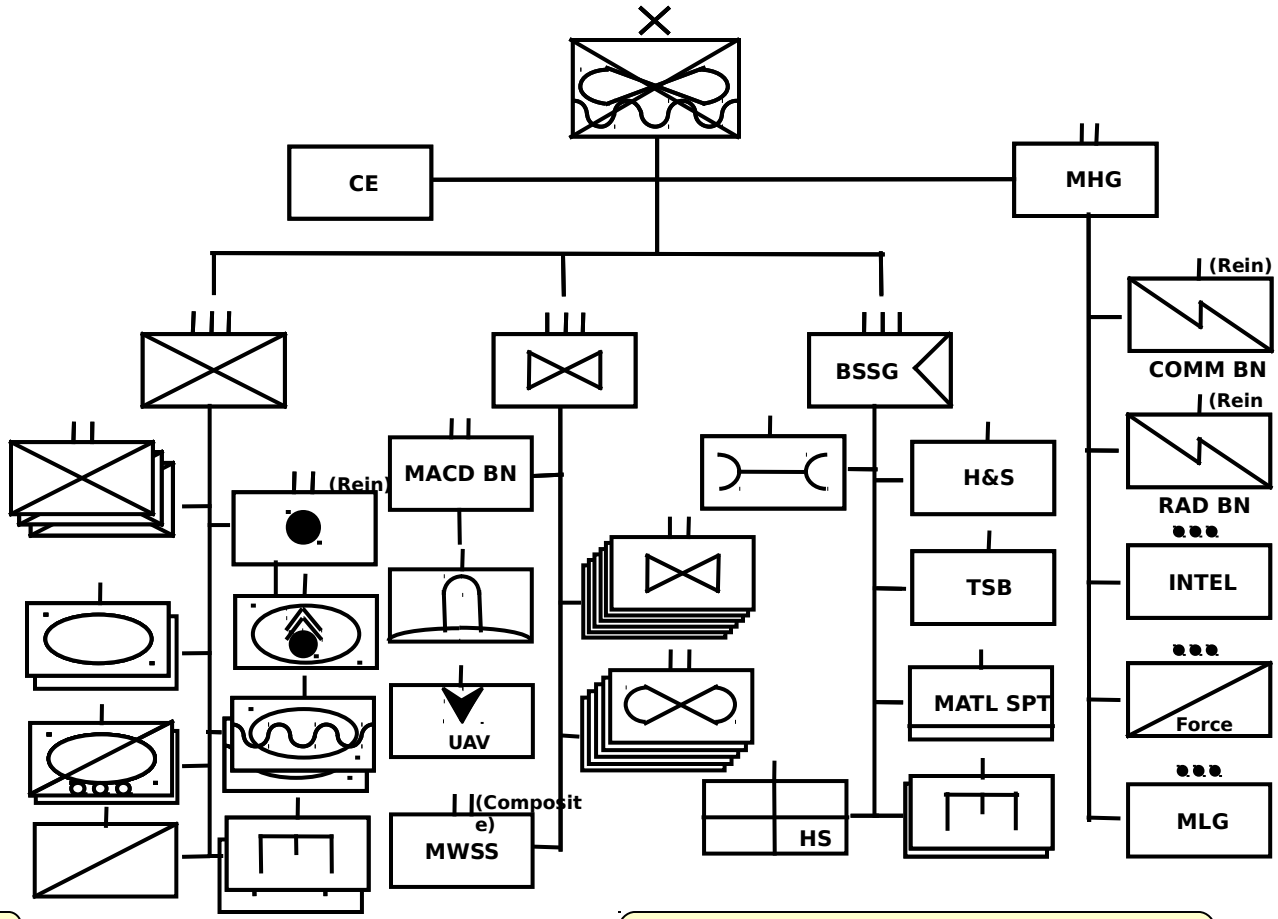
Baseline Marine Expeditionary Brigade 2015

Major Items of Equipment	
AAAV	106
LAV	60
M1A1	29
LW155	18
EFSS	8
HIMARS	6
UH-1Y	9
AH-1Z	18
JSF	36
EA-6B	5
KC-130	12
MV-22	48
CH-53E	20
UAV	6
Comm Veh	247
HMMWV	743
ITV	21
MTVR	430
LVS	105



14,376 Personnel*

496,780 ft² Vehicle Square*

14,403 MCBul 3501*

* Does not include MSE

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Baseline MCBul 3501 vs. 2015 MEB

- **GCE**

MCBul 3501	Baseline
1 Tank Bn	2 Tank Co
1 LAV Co	2 LAV Co
5 Artillery Btys	3 Artillery Btys
	1 HIMARS Bty
	1 EFSS Bty

- **ACE**

MCBul 3501	Baseline
2 Med Lift Sqdns (CH-46E)	4 Med Lift Sqdns (MV-22)

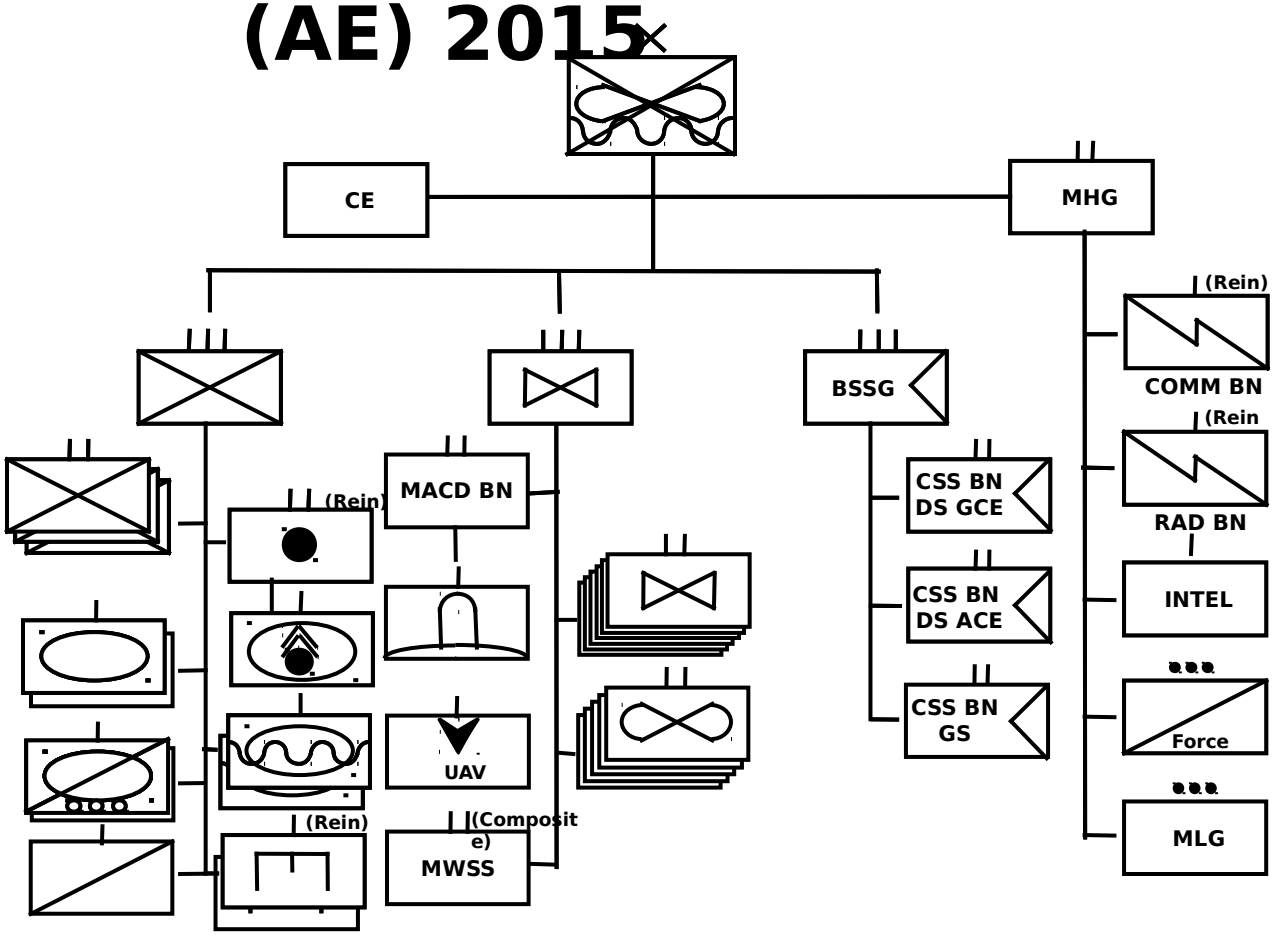
2015 Amphibious MEB Developme

- **From “Baseline”**
  - **Determining Assault Echelon and Assault Follo**
- **Conditions/Assumptions for Amphib MEB A**
  - **ATF & MPF “Interoperability” not fully develop**
  - **MEB Command and Control primarily from the**
  - **AE / AFOE make-up based on “intra-MEB” CSS**

…resulting in Personnel & Vehicle Square refine initial DRAFT…

Amphibious Marine Expeditionary Brigade (AE) 2015

Major Items of Equipment	
AAAV	106
LAV	59
M1A1	29
LW155	18
HIMARS	6
EFSS	8
UH-1Y	9
AH-1Z	18
JSF	**24 / *12***
EA-6B	***5***
KC-130	***12***
MV-22	48
CH-53E	20
UAV	6
Comm Veh	189 / ***2***
HMMWV	409 / ***23***
ITV	21
MTVR	192 / ***8***
LVS	35 / ***2***
CESE	44 / ***10***
CAC2S Veh	27 / ***12***



11,178 Pers* on ATF

12,064 DON II* on ATF

8%

1.8%

278,405 ft² Vehicle Square* on ATF

283,473 ft² DON II*

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* Does not include

Command Element - Amphib MEB (AE)

Major Items of Equipment

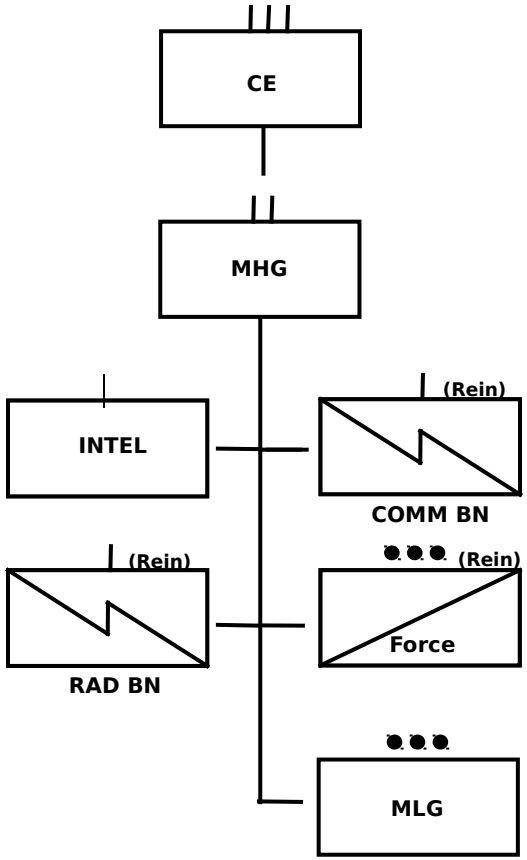
Comm Veh	40
ITV	5
HMMWV	28
MEWSS	1

10,411 ft² Vehicle Square*

33,760 ft² DON Veh Square*

594 Personnel*

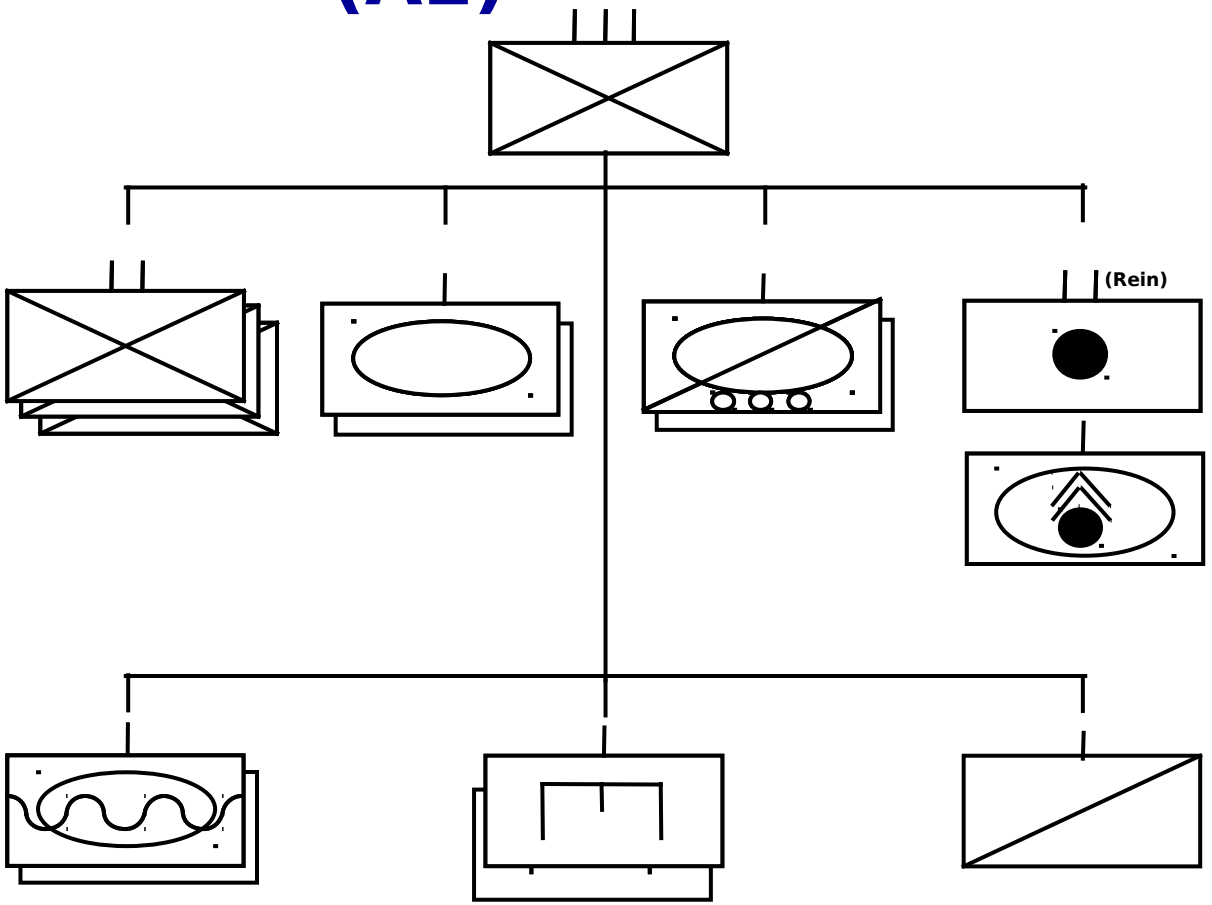
992 DON II*



* Does not include MSE

Ground Combat Element - Amphib MEB (AE)

Major Items of Equipment	
AAAV	106
LAVs	58
M1A1	29
LW155	18
HIMARS	6
EFSS	8
Comm Veh	88
HMMWV	263
ITV	16
MTVR	72
LVS	2
ABV	5
CESE	18



5,321 Personnel*

5,941 DON II*

149,308 ft² Vehicle Square*

130,623 ft² DON Veh Square*

2015 Assault Element: 35% more combat power (*)

* Does not include

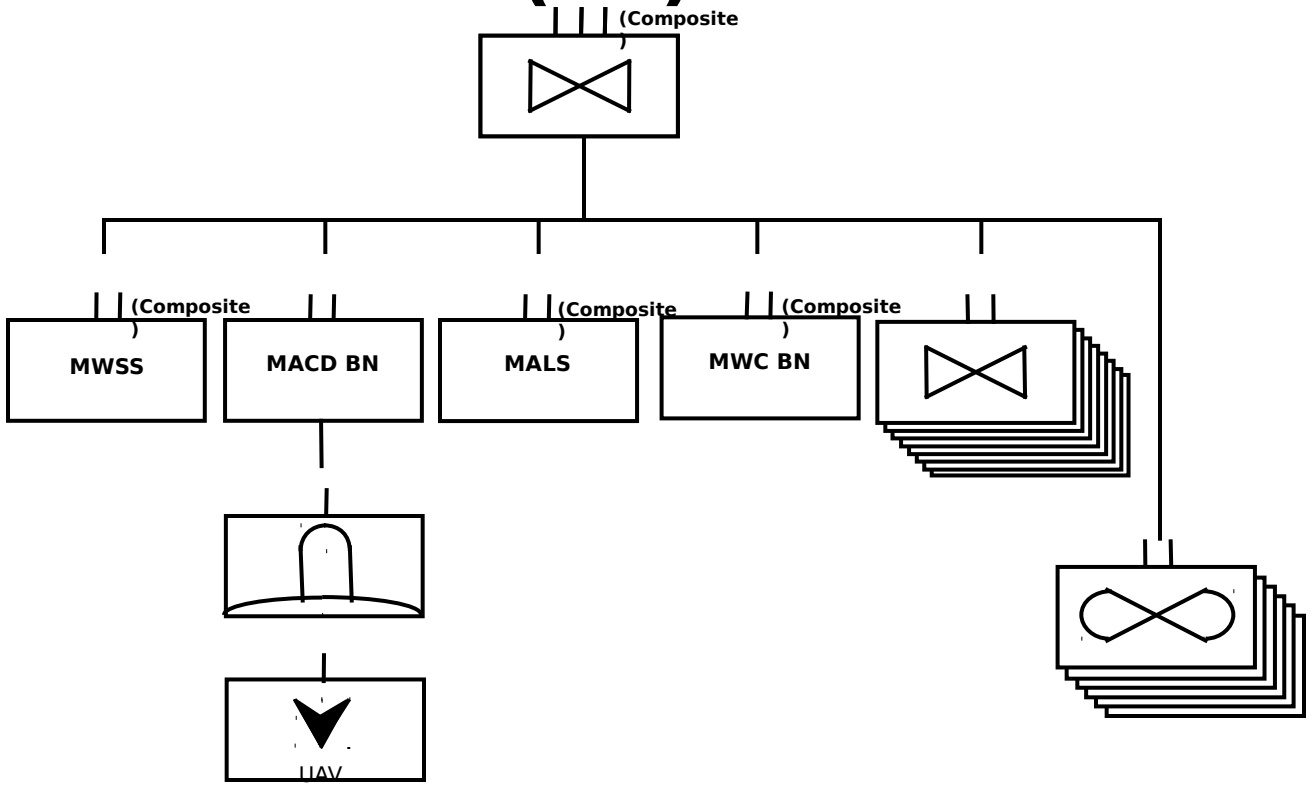
Ground Combat Element - Amphib MEB (AE)
2015 Baseline vs DoN II

- **Structure Differences**
  - **Infantry Regiment Structure**
    - **DoN II Battalions had 4 rifle companies (1,172 total Marines/Sailors)**
    - **Baseline Battalions have 3 rifle companies (934 total Marines/Sailors)**
  - **Artillery Regiment Structure**
    - **DoN II MEB had 5 batteries (3 DS & 2 GS) plus HQs (1,140 total Marines/Sailors)**
      (DoN II era Artillery Regiment had 4 battalions (3 DS & 1 GS))
    - **Baseline MEB has 3 LW 155 batteries, 1 HIMARS battery, and 1 EFSS battery (889 total Marines/Sailors)**
- **Unit Differences (to create 2 Mech Tms and 1 Vert Tm)**
  - **DoN II had 1 Tank Co, 1 AAV Co, and 1 LAI Co**
  - **Baseline increases to 2 Tank Co, 2 AAAV Co, and 2 LAR Co**

Aviation Combat Element - Amphib MEB (AE)

Major Items of Equipment

UH-1Y	9
AH-1Z	18
JSF	**24 /**
EA-6B	***12***
KC-130	***5***
MV-22	***12***
CH-53E	48
UAV	20
Avenger	6
ManPADS	16
CLAWS	16
Comm Veh	6
CAC2S Veh	21 / ***2***
HMMWV	27 /
MTVR	***12***
LVS	37 /
CESE	***23***
	18 / ***8***



3,553 Personnel* on ATF

3,471 DON II* on ATF

* Does not include MSE

- **Baseline includes 2 JSF Sqdns and 2 additional Med Lift Sqdns on ATF**
- **DON II MACG units predominately in AFOE, 2015 MEB shifts these units to the AE plus addition of UAV**

18,417 ft² DON Veh Sq*

28,981 ft² Veh Sq* on ATF

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Combat Service Support Element - Amphib MEB (AE)

Major Items of Equipment

Comm Veh	40
HMMWVs	96
MTVRs	102
LVS	27
MHE	38
CESE	22

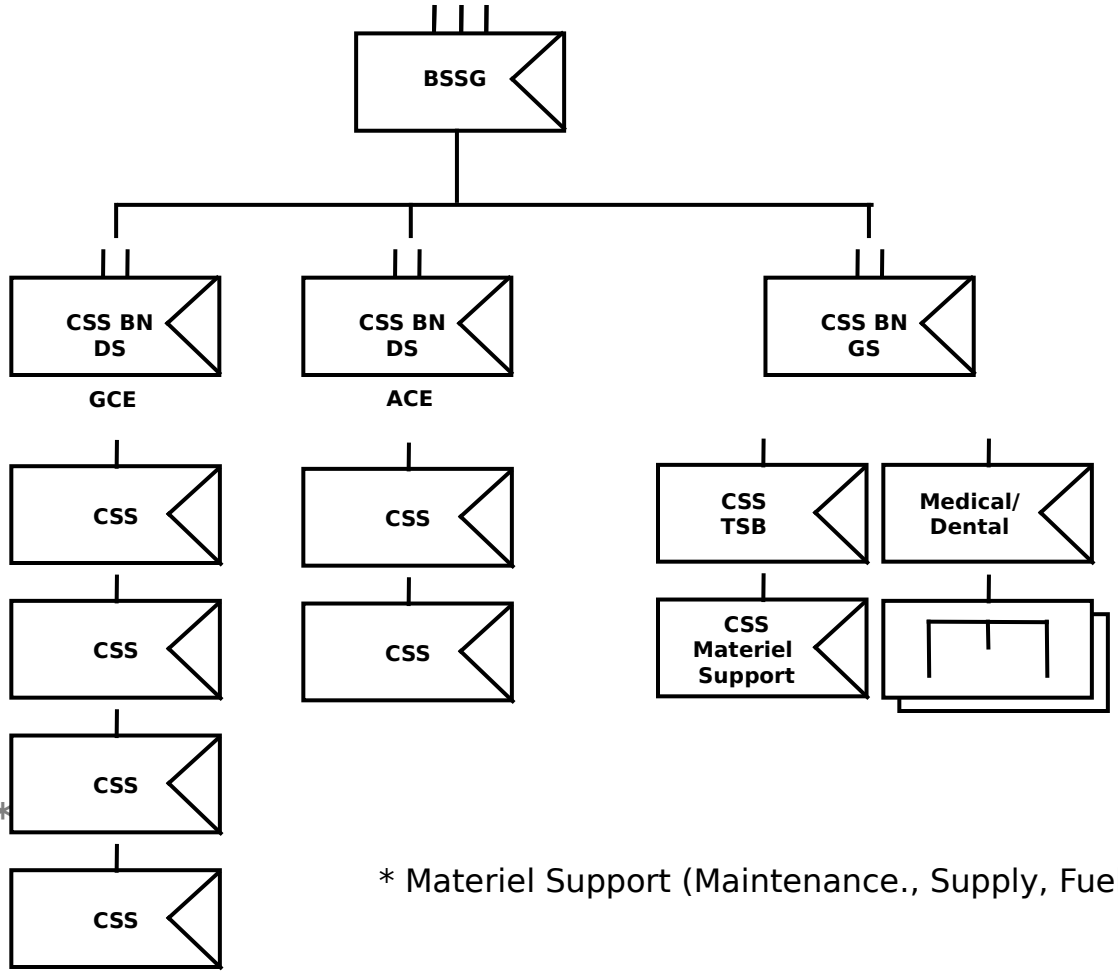
1,660 DON II*

1,710 Personnel*

0,674 ft² DON Vehicle Square*

89,705 ft² Vehicle Square*

* Does not include NSE



* Materiel Support (Maintenance., Supply, Fuel, Ammo)

Amphib MEB AE Comparison

AE Embarked	DoN Lift II	2015
Personnel *	12,064	11,178
Vehicle Square*	283,473	278,405
BN Vertical Lift		
Reach	54 NM	100 NM
Time	~ 5 hours	7.3 hours

* Marine Landing Force only; does not include NSE on amphibious shipping.

- **Assault Echelon Embarked:** **8% reduction in personnel**
  1.8% reduction in vehicle square

- **2015 Assault Element:** **35% more combat power**

Way Ahead

- **Model Baseline MEB using PP&O sponsored DON Lift II (+) Model**
- **Review Power Projection IWAR IPT results**
  - **Modeling Baseline MEB in ADROIT (N-81) & Seaway Loggie/I Codes (MCCDC)**
  - **Using various scenarios derived/approved by PP&O and IPT members 20-24 May**
- **Refine Baseline 2015 MEB based on completed modeling**
  - **T/O and T/E changes**
  - **Establish initial sustainment metrics**
- **MRB / MROC**
- **Study impact of Enhanced Networked Seabasing (Integrated MPF**

Recommendation

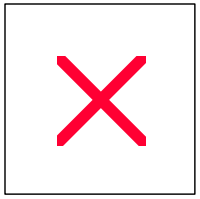
ROC approve the current direction of Baseline

2015 MEB development

Back-up Slides

McBul 3501 MPF MEB T/O

DET/UNIT	MULT	MARINES OFF	MARINES ENL	NAVY OFF	NAVY ENL	CIV
COMMAND ELEMENT TOTAL		111	635	5	10	2
GROUND COMBAT ELEMENT TOTAL		315	5477	18	272	0
AVIATION COMMAND ELEMENT TOTAL		608	4470	35	130	0
BSSG TOTAL		87	1924	76	228	0
MPF MEB TOTAL		1121	12506	134	640	2
MPF MEB		14403				



MARS SSC Scenario: Aircraft and Squadron Requirement

	MEB	
	Aircraft	**Squadrons***
MV-22	45	**4**
CH-53E	17	**1**
AH-1Z	21	**1**
UH-1Y	10	**1**
JSF	33-37	**3**
AEA	6	**1**
KC-130J	7	**1**

* Rounded to the nearest squadron multiple

MV-22 and CH-53E Aircraft Required

(2015 MEB in MARS Methodology)

Mission Radius	Aircraft	Sorties	Sortie rate	Number of Aircraft Required			
				Fly sorties	Non-Avail (NMC)	Attrition	Total
100 n.mi.	MV-22	118	3.2	37	9	1	47
	CH-53E	36	2.7	13	6	1	20
200 n.mi.	MV-22	129	2.7	48	12	1	61
	CH-53E	47	2.2	21	9	1	31

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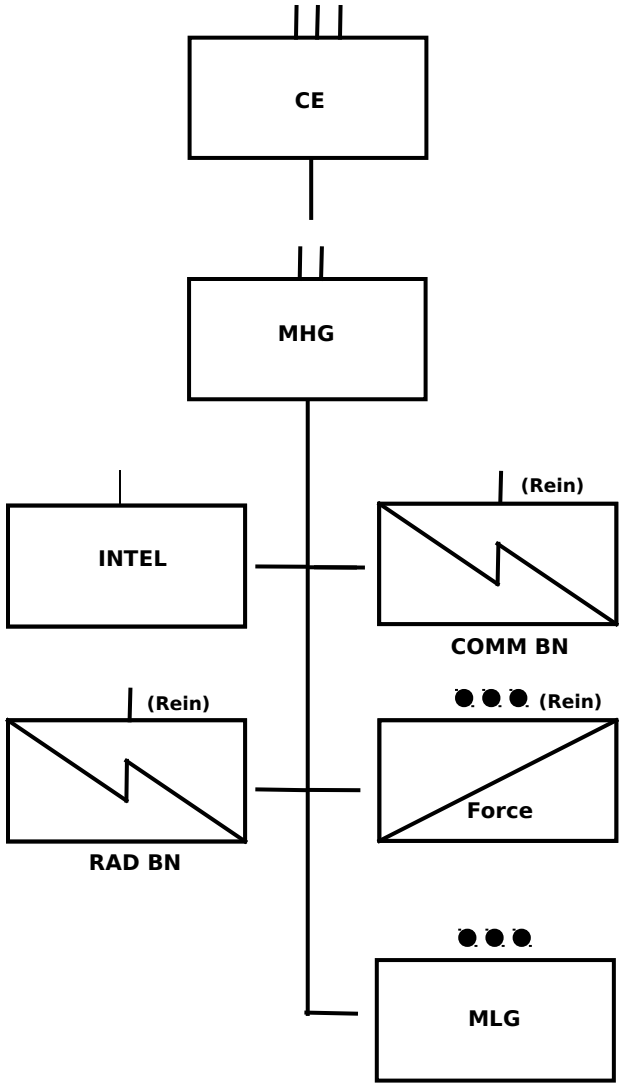
Command Element – Baseline MPF MEB

Major Items of Equipment	
Comm Veh	66
HMMWV	64
ITV	5
MEWSS	3
MTVR	24

728 Personnel*

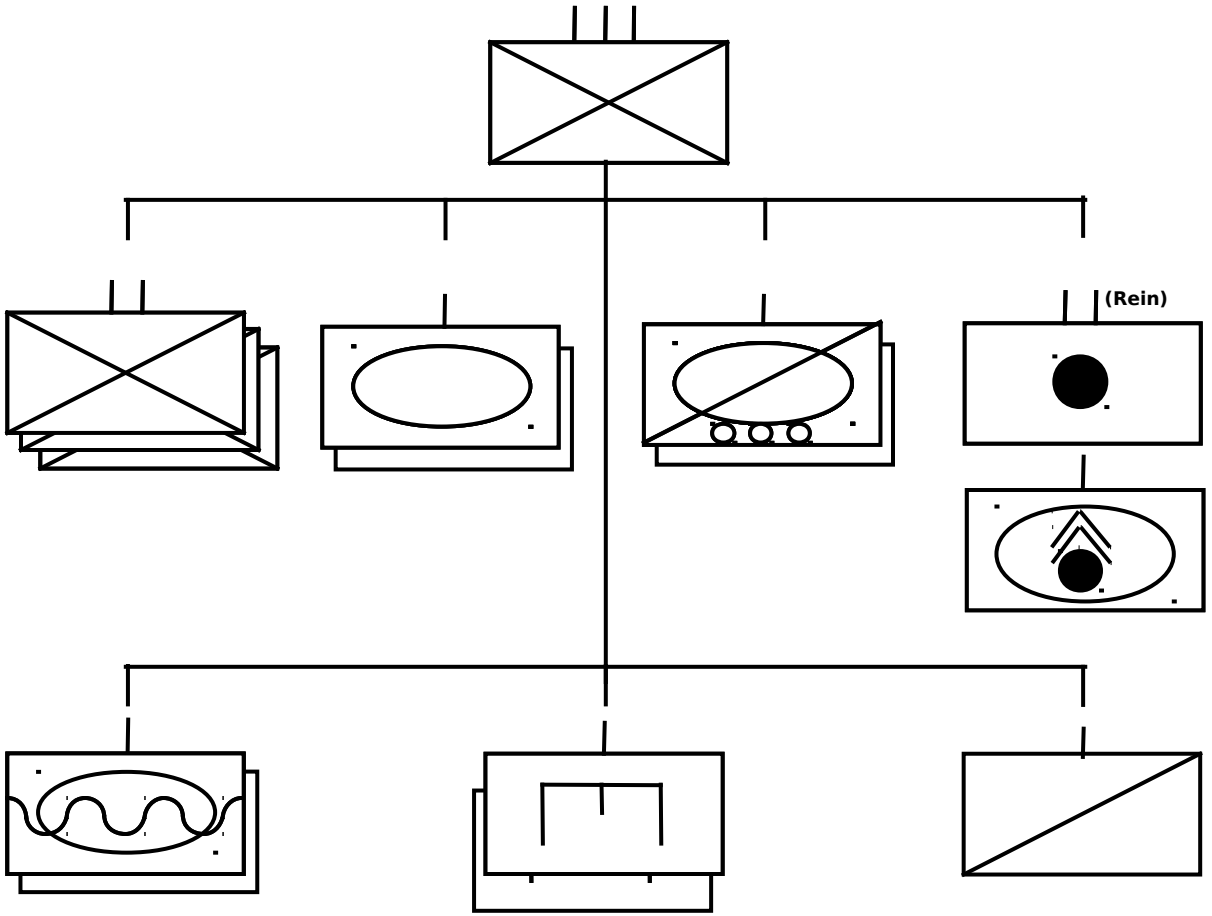
26,161 ft² Vehicle Square*

* Does not include NSE



Ground Combat Element - Baseline MPF MEB

Major Items of Equipment	
AAAV	106
LAVs	58
M1A1	29
LW155	18
HIMARS	6
EFSS	8
Comm Veh	101
HMMWV	388
ITV	16
MTVR	135
LVS	18
ABV	5
CESE	32



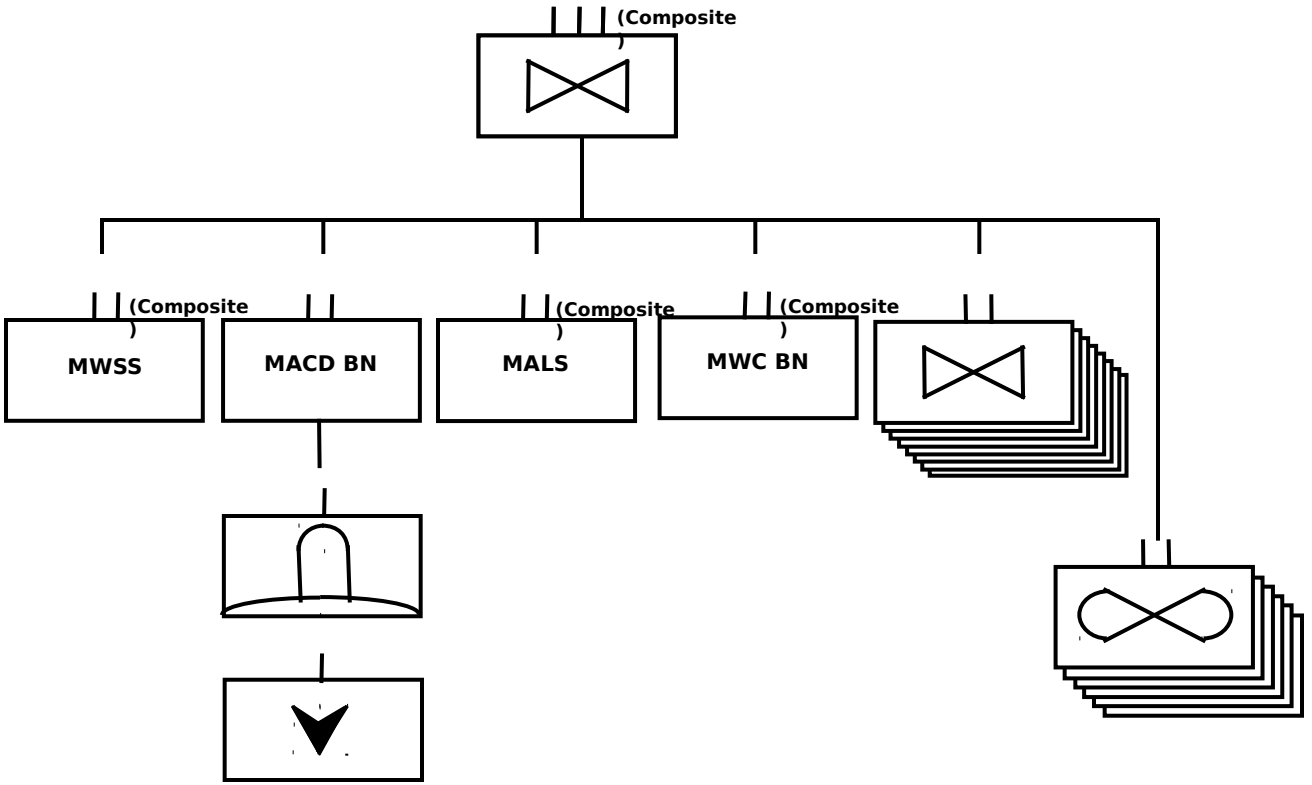
5,513 Personnel*

198,092 ft² Vehicle Square*

* Does not include NSE

Aviation Combat Element - Baseline MFP MEB

Major Items of Equipment	
UH-1Y	9
AH-1Z	18
JSF	36
EA-6B	5
KC-130	12
MV-22	48
CH-53E	20
VTUAV	6
Avenger	16
ManPADS	16
CLAWS	12
Comm Veh	28
CAC2S Veh	53
HMMWV	128
MTVR	68
LVS	26
CESE	43



5,735 Personnel*

106,628 ft² Vehicle Square*

* Does not include NSE

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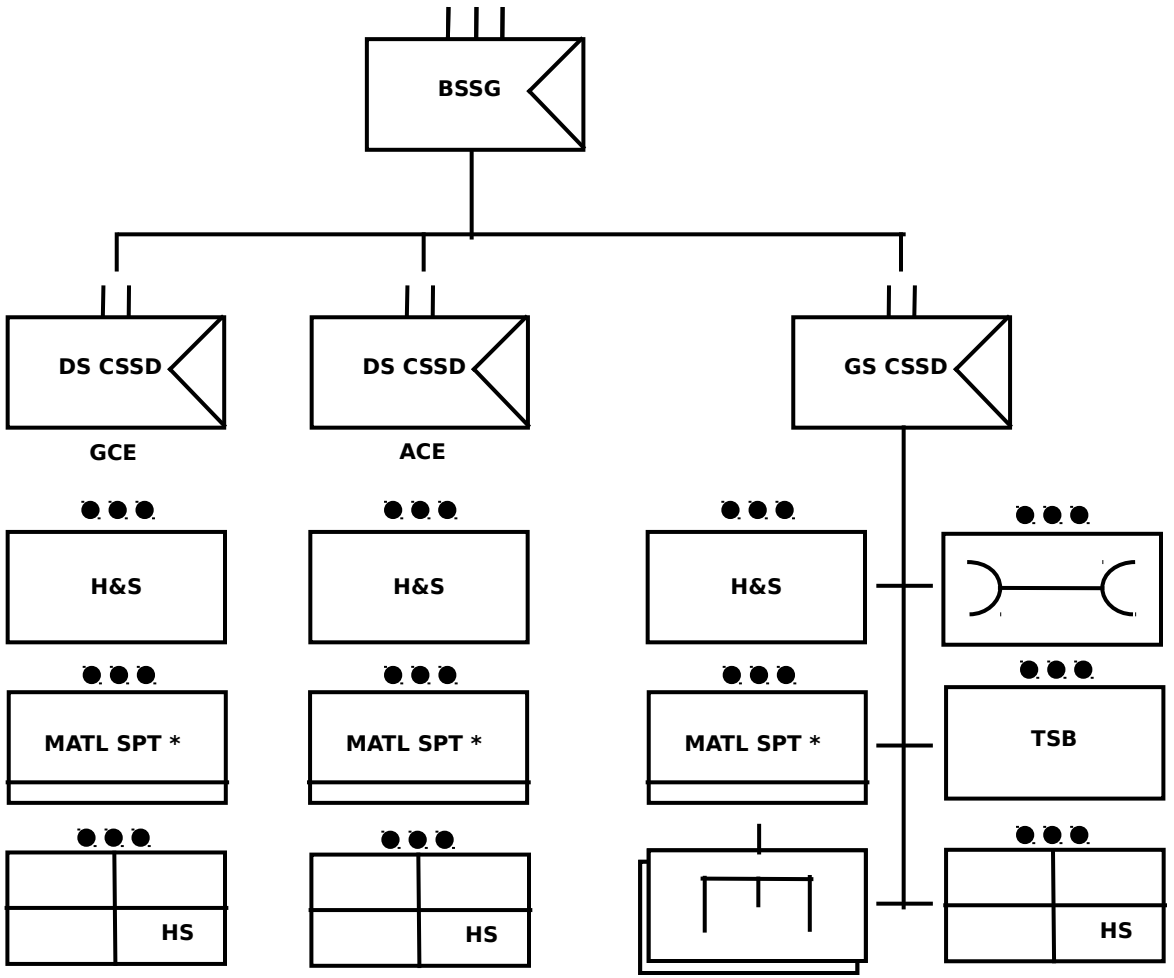
Combat Service Support Element - Baseline MPF MEB

Major Items of Equipment

Comm Veh	52
HMMWVs	165
MTVRs	202
LVS	61
MHE	59
CESE	52

2,400 Personnel*

65,899 ft² Vehicle Square*



* Does not include NSE

MEB Aircraft Spotting Factors (15 ATF)

Case 1

- Approximate “MEU Loading” as much as possible
- AH’s and UH’s to LPDs
- Create a “JSF Big Deck”
- Land-based AE element consisting of KC-130’s / EA-6
- SAR / MCM?

LHA (38.0) / D (42.0)

V-22	x 12	39.98
CH-53E	x 5	

LHA (38.0) / D (42.0)

V-22	x 12	39.98
CH-53E	x 5	

LHA (38.0) / D (42.0)

V-22	x 12	39.98
CH-53E	x 5	

LHA (38.0) / D (42.0)

V-22	x 12	39.98
CH-53E	x 5	

LHA (38.0) / D (42.0)

JSF 12 – 18	34.5 – 46.0

LPD-17 (6.0)

AH x 4	3.72
UH x 2	1.88

LPD-17 (6.0)

AH x 4	3.72
UH x 2	1.88

LPD-17 (6.0)

AH x 4	3.72
UH x 1	0.94

LPD-17 (6.0)

AH x 6	5.58

LPD-17 (6.0)

UH x 4	3.76

MEB Aircraft Spotting Factors (15 ATF)

Case 2

- Approximate “MEU Loading” as much as possible
- AH’s and UH’s to LPDs
- All 3 Sqdns of JSF embarked
- Land-based AE element consisting of KC-130’s / EA-
- SAR / MCM?

LHA (38.0) / D (42.0)

V-22	x 12	48.88
CH-53E	x 4	
JSF	x 6	

LHA (38.0) / D (42.0)

V-22	x 12	48.88
CH-53E	x 4	
JSF	x 6	

LHA (38.0) / D (42.0)

V-22	x 12	48.88
CH-53E	x 4	
JSF	x 6	

LHA (38.0) / D (42.0)

V-22	x 12	43.88
JSF	x 9	

LHA (38.0) / D (42.0)

CH-53E	x 9	41.40
JSF	x 9	

LPD-17 (6.0)

AH x 4	3.72	
UH x 2	1.88	

LPD-17 (6.0)

AH x 4	3.72	
UH x 2	1.88	

LPD-17 (6.0)

AH x 4	3.72	
UH x 1	0.94	

LPD-17 (6.0)

AH x 6	5.58	

LPD-17 (6.0)

UH x 4	3.76	

Aircraft Spotting Factors

	NAVAIR		DON Lift II
LHD	**42.0**		45.0
LHA	**38.0**		42.0
LPD-17	**6.0**		

Current MEU Mix (NAVAIR)			
Aircraft	**CH-46 Equivalent**	**Multiple**	**Total**
CH-46	1.0	12	12.0
CH-53E	2.68	4	10.7
AV-8B	1.53	6	9.18
			31.9
AH-1W	0.83	4	3.32
UH-1N	0.93	3	2.79
			38.0

"Future" MEU Mix (One-for-One) (NAVAIR)			
Aircraft	**CH-46 Equivalent**	**Multiple**	**Total**
MV-22	2.22	12	26.6
CH-53E	2.68	4	10.7
JSF	1.92	6	11.5
			48.8
AH-1Z	0.93	4	3.72
UH-1Y	0.94	3	2.82
			55.34

- **NAVAIR vs. DON Lift II numbers**
- **NAVAIR (Lakehurst) support**
- **Does not include SAR Aircraft**

* Does Not Include NSE

Why NSE is Important

- **Size of NSE affects the how much of the MEB AE can fit on Amphibious shipping**
- **NSE comprised 6% of DoN II MEB AE Total Vehicle Square**
  - **11% of Personnel**
  - **12% of Cargo Cube**
  - **DoN II NSE (AE)**
    - **Naval Beach Group Detachment**
      - **Assault Craft Units**
      - **Amphibious Construction Battalion Detachment**
      - **Beachmaster Unit Detachment**
    - **Naval Special Warfare Unit Detachment**
    - **Explosive Ordnance Disposal Detachment**
    - **Search and Rescue (3.5 CH-46 Equivalents*)**
    - **Airborne Mine Counter Measures (21.4 CH-46 Equivalents*)**
    - **Medical Augmentation to Ship's Company**
    - **Tactical Deception Group Detachment**
- **Current NSE requirement needs to be determined for the**

Combat Power Comparison (*)

Combat Power Index Values		DoN II Assault Element			2015 Baseline Assault Element		
Weapon	**CPI**	**Air**	**Surface**	**CPI**	**Air**	**Surface**	**CPI**
AAAVP	190					50	9,500
AAAVC	50					5	250
AAVC7	50						
AAVP7 (Mk 19)	110	3	62	7,150			
AAVR7 (Veh (50))	50						
LAV-25	170					14	2,380
LAV-AT	150					4	600
LAV-C2	30					1	30
LAV-L	25					3	75
LAV-M	67					2	134
LAV-R	25					1	25
Lightweight 155mm howitzer	120				6	6	1,440
HIMARS (6 MLRS Rockets)	300					6	1,800
M198 howitzer (155mm)	100	8	14	2,200			
M1A1	325		14	4,550		14	4,550
M220E4 TOW on HMMWV	110	16	16	3,520	14	14	3,080
M252 81mm mortar	57				8		456
M252 81mm mortar on HMMWV	67	8	8	1,072		8	536
M88A1E	1		1	1		1	1
M998 HMMWV	10	59	59	1,180	75	236	3,110
Marines and Sailors	1	1,544	2,059	3,603	1,237	2,272	3,509
Mk19 MG on HMMWV	50	8		400	19		950
MRC (M998 (10) + "Radio" (1))	11	13	20	363	18	18	396
Stinger on HMMWV (Avenger)	50	5	5	500	5	5	500
Truck (+LVS)	1	38	107	145		76	76
				24,684			33,398

MARS SSC Scenario: Aircraft and Squadron Requirement

	MEU Aircraft	MEB	
		Aircraft	Squadrons*
MV-22	15	45	**4**
CH-53E	6	17	**1**
AH-1Z	7	21	**1**
UH-1Y	3	10	**1**
JSF	6-10	33-37	**3**
AEA	--	6	**1**
KC			**1**

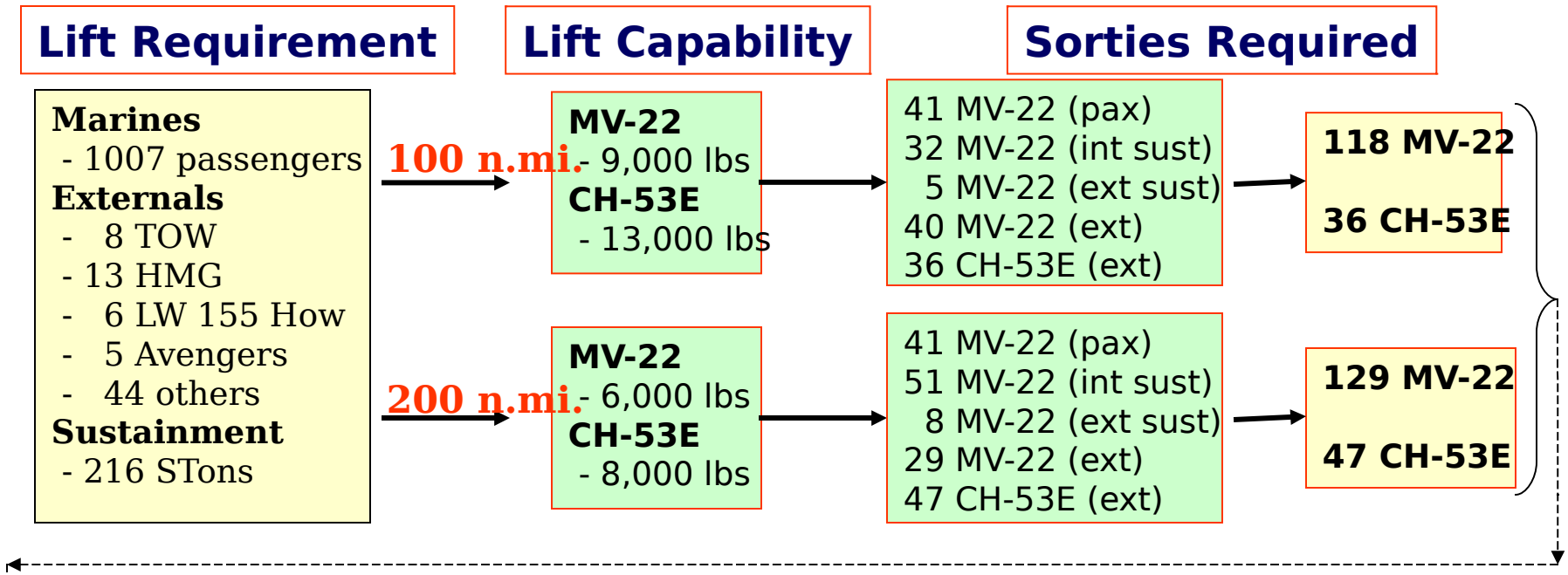
* Rounded to the nearest squadron multiple

MARS Methodology: Aircraft and Squadron Requirement (2015 MEB)

Aircraft	Sorties	Sortie rate	Aircraft Avail.	Number of aircraft required			
				Fly sorties	Availability	Attrition	Total
MV-22	118	3.2	.8	37	9	1	**47**
CH-53E	36	2.7	.7	13	6	1	**20**
AH-1Z	37	2.7	.75	14	5	1	**20**
UH-1Y	16	2.7	.75	6	2	1	**9**
JSF	66	3.2	.85	21	4	1	**33-37***
AEA	5	3.2	.85	2	1	0	**6***
KC-							

*** KC-130, AEA, and JSF requirement numbers are based on the MARS SSC Scenario findings.**

Analytical Process



Mission radius	AC	Sorties	Sortie rate	"Up" AC Req	Total AC	Aircraft per wave 1	2	3	4	Time Req (hrs)
100 n.mi.	MV-22	118	3.2	37	47	37	36	36	9	7.5
	CH-53E	36	2.7	13	20	12	12	12	0	
200					48					11.8

Function of mission time

Accounts for aircraft availability and combat attri

Historical MEB "Highlights"

MEB 1980 TO PRESENT											
		1980 NAVMC 2710	1982 NAVMC 2710	1983 DON I *	1983 NAVMC 2710	1985 NAVMC 2710		1990 DON II	1996 MCBUL 3501	2001 MCBUL 3501	2001 TFS MCCDC
		Amphib	Amphib	Amphib	Amphib	Amphib	MPF	Amphib	MPF	MPF	Notional
Troops											
	USMC	14000	15670	16340	15670	15700	16665	17968	17644	14403	13100
	NSE	1800	2350	2340	2350	2350	1192	3966	1193	1193	
	Total	15800	18020	18680	18020	18050	17857	21934	18837	15596	
	AE	15800	18020	12200	12990			13072			
	AFOE			6400	5030			8862			
PEIs											
	Tanks	17	17	17	17	17	53	14	58	58	14
	AAV	45	45	45	45	47	109	62	109	109	108
	LAV			36		36	28	30	25	25	25
	105 How	18									
	155 How	6	24	24	30	30	30	36	30	30	18
	8" How	2	2		6	6	6				
	TOW	24	24	24	24	48	96		48	48	24
	HIMARS										
	EFSS										
Aircraft											
	AV-8	20	40	DON I does not address any fixed wing aircraft	40	20	20	26	20	16	16
	F/A-18	24	24		24	24	24	36	24	24	24
	F/A-18D							24	12	12	12
	A-6	12	20		20	10	10				
	JSF										
	EA-6	4	7		7	4	4	6	5	5	5
	RF-4	4	4		4	4	4				
	OV-10	6	6		6	6	6	6			
	KC-130		8		8	6	6	12	12	12	12
	CH-46	36	48	52	48	48	12		24	24	24
	MV-22							60			
	CH-53	32	32		32	20	12		8	10	
	CH-53E		10	32	10	8	8	20	16	16	16
	AH-1	24	24		24	12	24	28	18	18	18
	UH-1	6	6		6	12	12	12	9	9	9
Ships											
	AE	21	26	20	20	20		15			
	AFOE	0	0		11	11					